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GASSERIAN GANGLION FOR EPILEPTIFORM
NEURALGIA.

BY

J. CRAWFORD RENTON, M.D.,

SURGEON AND LECTURER ON CLINICAL SURGERY, WESTERN INFIRMARY, GLASGOW;
EXAMINER IN SURGERY IN THE UNIVERSITY OF EDINBURGH.

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J. CRAWFORD RENTON, M.D.,

Surgeon and Lecturer on Clinical Surgery, Western Infirmary, Glasgow ;
Examiner in Surgery in the University of Edinburgh.

THE two following cases illustrate the value of the operation for excision of the Gasserian ganglion in cases of epileptiform neuralgia. Along with the cases recorded by Mr. Victor Horsley, Mr. Hartley, Mr. Krause, and Mr. Jonathan Hutchinson, jun., they encourage us to hope that one of the most severe complaints can now with safety be relieved :—

CASE I.

History.—A. B., aged 57, was placed under my care by Dr. Haldane, of Bridge-of-Allan, and Dr. White, of Stirling. He had suffered for seven years from increasingly severe attacks of epileptiform neuralgia of the left fifth nerve, so much so that he sometimes had as many as thirty attacks in the hour, with spasm of the left arm, and he was compelled to be kept under large doses of morphine, having sometimes 4 grs. daily. Professor Cheine and Dr. Beatson saw him also in consultation, and we were all agreed that the only operation which would permanently relieve him was removal of the Gasserian ganglion. He had the typical appearance during the attacks of pain with convulsive spasm of the facial muscles and depressors of the lower jaw, invariably covering his face with his left hand to try and stop the spasm, the left hand twitching during the attack.

Operation.—In November, 1898, assisted by Dr. Beatson, Dr. Bryce, Dr. White, Dr. Guthrie, and Dr. Campbell, I removed the ganglion, adopting the method of Hartley and Krause, which we may call the high road, in contradistinction to the low road through the base of the skull, after removing the zygoma or following the inferior orbital nerve to the ganglion. By the high

road a flap of skin, fascia, and muscle is turned down with its base either below or in front of the ear, and a large portion of bone removed by the trephine or burr ($1\frac{1}{2}$ inch), the aperture being increased in size by the clipping forceps close to the zygoma. The tendency is to be too high up. The opening being sufficiently large for working purposes, the dura was punctured and carefully separated from the skull until the foramen spinosum was reached, and out of which the middle meningeal artery was seen emerging. It gave no trouble; I did not, therefore, attempt to put a double ligature on it or to plug the foramen. After some delay with oozing, which is the great difficulty of the operation, I exposed the foramen rotundum and foramen ovale, and drew out the superior and inferior maxillary divisions of the fifth, dividing them with scissors, avoiding the ophthalmic division, which is best left alone on account of troublesome eye symptoms which may follow its removal. The ganglion was then raised up and the portion associated with the two nerves divided removed. A gauze drain was left to prevent collection of blood, and the soft parts stitched without replacing any bone.

After-History.—The patient suffered from shock for twelve hours, but gradually recovered, and made progress daily until a month after the operation he was able to sit up in bed. He would not have been so long kept at rest, but he was so exhausted with pain, and required so much morphine previous to the operation, that it was ten days after it before he realised clearly where he was or what was going on around him. Since the operation in November, 1898, he has remained quite free from spasm and pain, and has been able to attend to his business. On two occasions he had a slight general epileptic attack, one at the commencement of an attack of influenza.

CASE II.

History.—R. S., aged 67, a patient of Dr. Love's, had suffered from epileptiform neuralgia for five years, the pain being principally referred to the right inferior dental nerve, was admitted to the Western Infirmary under my care, in August, 1899. I had previously removed the inferior dental nerve with complete relief for three months, but the pain was now so severe and constant that she and her family begged that something more should be done. Her husband said he could not bear to see her suffering so much any longer.

Operation.—Assisted by Dr. Fortune, Dr. M'Donald, and Dr. Lindsay, I performed the same operation as in the first case, removing the ganglion and dividing the superior and inferior maxillary divisions of the fifth, avoiding the ophthalmic branch.

After-History.—This patient had no shock, and three days after the operation wished to get out of bed and go home. In three weeks she was out of bed, and went home at the end of the fourth week, and has remained quite well since the day the ganglion was removed.

Rose's operation by the pterygoid route seems more dangerous than that performed in these cases, and the view obtained of the ganglion is not nearly so satisfactory as by the temporal or high road. Septic infection is more apt to occur, owing to the possibility of opening the Eustachian tube, and the danger of necrosis of the zygoma resulting must also be borne in mind.

Regarding the operation by the high road, it is laborious, and requires great patience, as the bleeding is very troublesome; and in one case which Mr. Hutchinson recorded in 1898, he had to divide the operation into two stages, on account of the hæmorrhage. Elevation of the head during the operation diminishes the oozing considerably. Having separated the dura mater from the bone with a small, slightly-curved, periosteum detacher, the temporo-sphenoidal lobe, covered with dura, is held up with thick glass retractors, and, when the foramen spinosum is reached, the middle meningeal is generally secured by a small wooden plug being pushed into the foramen. I did not find this necessary in either case. Should any difficulty be experienced in drawing up the brain from tension of the dura mater, the dura may be punctured with a tenotomy knife, and the escape of fluid will materially increase the space to work in. Continuing to separate the dura inwards from the foramen spinosum, the ganglion with the foramen rotundum and foramen ovale are seen; the nerves are drawn out with a strabismus hook, and divided either with a knife or scissors. Separating the divided nerves, the ganglion associated with them is raised up and removed, leaving the ophthalmic branch intact. This saves any ulceration of the cornea, and the possibility of having to remove the eye.

All the evidence that I have been able to collect as regards this operation has strongly impressed me with the importance of its being performed earlier than formerly, before the patient has been weakened by continuous pain and large doses of soothing

remedies ; and, further, there seems little use in operating on the terminal branches of the nerve, as no permanent relief results unless limited to one branch.

The examination of the ganglia by Dr. Bryce and Dr. Fortune has not shown any disease. Adhesions round the nerves have been found in some cases, but there seems little doubt that Mr. Horsley is correct in ascribing most of the cases to a descending neuritis.



